

What is claimed is:

1. A speech application system, comprising:

- A. a speech recognition (SR) system configured to receive an audio input and generate a set of semantic data representing a plurality of valid interpretations of said audio input;
- B a speech application script, loaded at the SR system and configured to task said SR system, said application script defining a context;
- C. a semantic data evaluator, configured to receive said set of semantic data and said context and, as a function thereof, to generate a linguistic result corresponding to said audio input, and to return said linguistic result to said application script; and
- D. a set of reusable object oriented interfaces local to the SR system, said interfaces configured to interface said application script with said SR system.

2. A system as in claim 1, wherein one or more of said application script is included in a Web page.

3. A system as in claim 1, wherein one or more of said interfaces are objects exposed via ActiveX facilities.

4. A system as in claim 1, wherein said application script includes programming code

2 written in a language chosen from a group of scripting languages comprising

3 (1) Jscript;

4 (2) PerlScript; and

5 (3) VBscript.

1 5. A system as in claim 1, wherein said set of semantic data is represented as a semantic  
2 tree instance.

1 6. A system as in claim 1, wherein said set of semantic data is represented in a semantic  
2 object.

1 7. A system as in claim 1, wherein said audio input is received from a device chosen from  
2 a group comprising:

3 A. a telephone;

4 B. a cellular telephone;

5 C. a personal computer;

6 D. an application server; and

7 E. an audio receiver.

1 8. A system as in claim 1, wherein said audio input is received via a network comprised of  
2 one or more wire or wireless networks from a group comprising:

3 A. a telephone network;

4 B. a cellular telephone network;

- C. a LAN;
- D. a WAN;
- E. a virtual private network;
- F. the Internet; and
- G. the Web.

9. A system as in claim 1, wherein said plurality of valid interpretations of said audio input includes all valid interpretations of said audio input within said context.

10. A system as in claim 1, wherein speech application is chosen from a group of interactive speech applications comprising:

- A. consumer survey applications;
- B. Web access applications;
- C. educational applications, including health education applications and computer-based lesson applications and testing applications;
- D. screening applications, including patient screening applications and consumer screening applications;
- E. health risk assessment applications;
- F. monitoring applications, including health data monitoring applications and consumer preference monitoring applications;
- G. compliance applications, including applications that generate notifications of compliance related activities, including notifications regarding health or product

14 maintenance;

15 H. test results applications, including applications that provide at least one of lab  
16 test results, standardized tests results, consumer product test results, and  
17 maintenance results; and

18 I. linking applications, including applications that link two or more of the  
19 applications in parts A through H.

1 11. A speech application system comprising:

2 A. a speech recognition (SR) system hosted on a first computer and configured to  
3 receive an audio input from an input device and to generate one or more  
4 semantic objects representing a plurality of valid interpretations of said audio  
5 input;

6 B a Web page loaded on said first computer, from a second computer, said Web  
7 page including an application script comprising a set of speech application  
8 functionality and configured to interact with said input device via said SR  
9 system, wherein said speech application is configured to conduct speech  
10 application sessions without accessing said second computer;

11 C. a set of reusable object oriented interfaces local to the first computer, said  
12 interfaces including:

13 (1) one or more interface objects configured to facilitate access by said  
14 application script to standard services of said first computer; and

15 (2) a semantic interface configured to facilitate access to and control of said

16 SR system by said application script; and

- 17 D. a semantic object evaluator, configured to generate from said semantic objects,  
18 as a function of said context, a single interpretation of said audio input and to  
19 return said single interpretation to said application script.

1 12. A system as in claim 11, wherein speech application is chosen from a group of  
2 interactive speech applications comprising:

- 3 A. consumer survey applications;  
4 B. Web access applications;  
5 C. educational applications, including health education applications and computer-  
6 based lesson applications and testing applications;  
7 D. screening applications, including patient screening applications and consumer  
8 screening applications;  
9 E. health risk assessment applications;  
10 F. monitoring applications, including health data monitoring applications and  
11 consumer preference monitoring applications;  
12 G. compliance applications, including applications that generate notifications of  
13 compliance related activities, including notifications regarding health or product  
14 maintenance;  
15 H. test results applications, including applications that provide at least one of lab  
16 test results, standardized tests results, consumer product test results, and  
17 maintenance results; and

18 I. linking applications, including applications that link two or more of the  
19 applications in parts A through H.

1 13. A system as in claim 11, wherein said set of reusable objet oriented interfaces and said  
2 semantic object evaluator are objects exposed via ActiveX facilities.

1 14. A speech application script included within a Web page, and configured to interact with  
2 a SR system hosted on a first computer and configured to receive an audio input and to  
3 generate one or more semantic objects representing a plurality of valid interpretations  
4 of said audio input, said first computer also including a plurality of interfaces objects  
5 and a semantic object evaluator configured to generate from said one or more semantic  
6 objects a single interpretation of said audio input as a function of a context, said speech  
7 application script comprising:

8 A. a context definition;

9 B. a link to said semantic object evaluator;

10 C. a link to said SR system, via a semantic interface object, from said plurality of  
11 interface objects;

12 D. a set of control functionality comprising:

13 (1) a session manager configured to generate user prompts and to determine  
14 a next action as a function of said single interpretation;

15 (2) a SR system controller, configured to task said SR system; and

16 (3) a communication manager, configured to manage interaction with said

17                               input device via said SR system,  
18                               wherein said speech application script is loaded on said first computer from a second  
19                               computer and said speech application is configured to conduct speech application  
20                               sessions without accessing said second computer,

1       15.    A system as in claim 14 wherein said interface objects are objects exposed via ActiveX  
2                               facilities.

1       16.    A application script as in claim 14 wherein said speech application script is a speech  
2                               application chosen from a group of interactive speech applications comprising:  
3                               A.     consumer survey applications;  
4                               B.     Web access applications;  
5                               C.     educational applications, including health education applications and computer-  
6                               based lesson applications and testing applications;  
7                               D.     screening applications, including patient screening applications and consumer  
8                               screening applications;  
9                               E.     health risk assessment applications;  
10                              F.     monitoring applications, including heath data monitoring applications and  
11                              consumer preference monitoring applications;  
12                              G.     compliance applications, including applications that generate notifications of  
13                              compliance related activities, including notifications regarding health or product  
14                              maintenance;

- H. test results applications, including applications that provide at least one of lab test results, standardized tests results, consumer product test results, and maintenance results; and
- I. linking applications, including applications that link two or more of the applications in parts A through H.

17. A method of performing a speech application session, wherein a SR system is hosted on a first computer and includes a means to receive an audio input, said method comprising:

- A. receiving said audio input by said SR system;
- B. loading a Web page including an application script on said first computer, said application script including a set of functionality configured to manage a speech application session and control said SR system, without accessing functionality from a second computer;
- C. establishing a set of standard interfaces between said SR system and said application script, including establishing a semantic evaluator;
- D. in response to tasking by said application script, generating by said SR system one or more semantic objects representing all possible interpretations of said audio input;
- E. in response to receiving a context defined by said application script, determining by said semantic evaluator a single semantic interpretation from said one or more semantic objects; and



17 F. determining a next action by said application script as a function of said single  
18 semantic interpretation.

1 18. A method of configuring a speech application system, wherein a SR system is hosted on  
2 a first computer and includes a means to receive an audio input, said method  
3 comprising:

4 A. generating a Web page on a second computer;

5 B. defining a speech application script including a set of functionality configured to  
6 manage a speech application session and control said SR system, without  
7 accessing functionality from said second computer;

8 C. integrating said application script into said Web page;

9 D. loading said Web page, including said application script, from said second  
10 computer to said first computer; and

11 E. establishing a set of standard interfaces between said application script and said  
12 SR system.